STIC

Scientific and Technical Information Center

EIC 2800
SEARCH REPORT

SIRA
Delivering Technologies for Patents

STIC Database Tracking Number: 317019

To: HOANG-QUAN HO Location: JEF-6C83 Art Unit: 2818 Tuesday, December 15, 2009 **Case Serial Number: 10/524,610**

From: SCOTT SEGAL Location: EIC2800 JEF-4B55 Phone: (571)272-1314 scott.segal@uspto.gov

Search Notes

Re: Layer System Comprising a Silicon Layer and a Passivation Layer, Method for Production a Passivation Layer on a Silicon Layer and the Use of Said System and Method

Examiner Ho:

Attached are edited search results from the patent and NPL literature in STN. Databases searched included Chemical Abstracts, Derwent World Patent Index, Japan Patent Abstracts, Korean Patent Abstracts, and a little searching in CAS Registry.

While I tried several different search strategies, I was unable to find any citations that met the search requirements. I did included one Japanese Patent Abstract, but it is a stretch from the Claims.

If you would like more searching to be done on this case, or if you'd like to re-focus the search, please do not hesitate to contact me.

Respectfully,
Scott

Scott Segal
Searcher, STIC-EIC2800
JEF-4B55, 571-272-1314

317019

STIC
Scientific and Technical
Information Center

EIC 2800
SEARCH REQUEST

SIRA
Delivering Technologies
for Patents

Today's Date DEC 10

Name Hoang - Quan Ho

AU/Org. 2818 Employee # 81339

Bld.&Rm.# Jef. 6C83 Phone 2-8711

Priority App. Filing Date 8-17-03

Case/App. # 10/524610

Format for Search Results

EMAIL ✓   PAPER __

If this is an Appeals case, check here ☐

Describe this invention in your own words

Synonyms

Additional Comments

Please submit completed form to your EIC.

01/09

STIC USE ONLY

Searcher Scott Segal   Date Completed 12/15/09

Phone 2-1314   Sources CA, Derwent, Japio, Kaapub

, Diane   EC 10   3 17019

STIC-EIC2800@uspto.gov

.t: Thursday, December 10, 2009 12:29 PM

.o: Ho, Hoang-Quan T. (AU2818)

Cc: STIC-EIC2800

Subject: Confirmation Receipt: 2800 Search Request - 10524610

This is an automated email confirming that your 2800 Search Request has been received by STIC's EIC2800.

Thank you for using STIC services.

___

Requester --

Name: **HO, HOANG-QUAN TRAN**
Organization: **TC 2800**
Art Unit: **2818**
Employee Number: **81339**
Office Location: **JEF-6C83**
Phone Number: **(571)272-8711**
Email: **hoangquan.ho@uspto.gov**

Request Detail ---

Attachment: **No**

Case/Application number: **10524610   PALM**
Priority App. Filing Date: **08/17/2003**
Format for Search Results: **EMAIL**
Board of Appeals Case?: **No**

Describe this invention in your own words.:
Two layer passivation which comprises a bottom inorganic composition layer and a top organic composition layer provided on top of an etched silicon layer.

Synonyms:

Additional Comments:
Please call the examiner for search inquiry techniques.

Request Date: **Thursday, December 10, 2009 12:29 PM**

12/10/2009

(54) LAYER SYSTEM COMPRISING A SILICON LAYER AND A PASSIVATION LAYER, METHOD FOR PRODUCTION A PASSIVATION LAYER ON A SILICON LAYER AND THE USE OF SAID SYSTEM AND METHOD

(76) Inventors: Franz Laermer, Weil Der Stadt (DE); Lutz Mueller, Aichtal (DE); Winfried Bernhard, Gerlingen (DE)

Correspondence Address:
KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004 (US)

Publication Classification
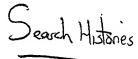
(57) **ABSTRACT**

A layer system is described including a silicon layer and a passivation layer which is applied at least regionally to the silicon layer's surface, the passivation layer having a first, at least largely inorganic partial layer and a second partial layer, the second partial layer being made of an organic compound including silicon or containing such a material. In particular, the second partial layer is structured in the form of a "self-assembled monolayer." Furthermore, a method is described for creating a passivation layer on a silicon layer, a first, inorganic partial layer being created on the silicon layer and a second partial layer, containing an organic compound including silicon or being made thereof, being created at least in certain areas on the first partial layer. Both partial layers form the passivation layer. The described layer system or the described method is particularly suited for creating self-supporting structures in silicon.

13:45:54 ON 14 DEC 2009
14:25:35 ON 14 DEC 2009

FILE 'HCAPLUS, WPIX, JAPIO, KOREAPAT' ENTERED AT 13:46:08 ON 14 DEC 2009
```
L1      148602 SEA ABB=ON  (MICROETCH? OR ETCH##### OR SPUTTER? OR ABLAT####
               OR PIT#### OR ENGRAV#### OR ASH### OR MICROMACHIN? OR CUT####
               OR REMOV### OR MACHIN### OR PLANARIS##### OR PLANARIZ##### OR
               POLISH#### OR CMP)(4A)(SILICON OR SI)
L2       35838 SEA ABB=ON  (?TRENCH? OR CONCAVE OR CONCAVIT? OR HOLE OR
               ORIFICE OR APERTURE OR SOCKET OR CAVIT### OR MICROCAVIT? OR
               RECESS##### OR PIT OR MICROPIT OR DEPRESSION)(4A)(SILICON OR SI)
L3        8795 SEA ABB=ON  (INDENT##### OR MICROINDENT? OR CRATER OR MICROCRAT
               ER OR DIMPLE OR VOID OR OPENING OR MICROVOID OR SLOT OR SLIT)(4A)(SILICON OR SI)
L4       25238 SEA ABB=ON  (THROUGHHOLE OR THROUGHOLE OR THROUGH HOLE OR
               CREVICE OR MICROCREVICE OR ?CHANNEL? OR ?GROOV? OR VALLEY OR
               GULLEY OR FURROW### OR STI)(4A)(SILICON OR SI)
L5      198423 SEA ABB=ON  (L1 OR L2 OR L3 OR L4)
L6       13458 SEA ABB=ON  L5 AND (SIO2 OR SILICA OR SIOX)(3A)(?LAYER? OR
               ?COAT? OR ?FILM? OR ?SURFACE? OR LAMEL? OR ?LAMINAT?
               OR OVERLAY? OR OVERLAID OR SHEET#### OR ?DEPOSIT? OR OVERSPREAD?
               OR UNDERLY### OR OVERLY### OR OVERLIE# OR UNDERLIE# OR COVER?
               OR LINER OR LINING OR LINED)
L7       28158 SEA ABB=ON  L5 AND (SIO OR (SILICON OR SI)(W)(?OXIDE?))(3A)(?LA
               YER? OR ?COAT? OR ?FILM? OR ?SURFACE? OR LAMEL? OR ?LAMINAT?
               OR OVERLAY? OR OVERLAID OR SHEET#### OR ?DEPOSIT? OR OVERSPREAD
               ? OR UNDERLY#### OR OVERLY#### OR OVERLIE# OR UNDERLIE# OR
               COVER? OR LINER OR LINING OR LINED)
L8        6313 SEA ABB=ON  L5 AND (GLASS## OR QUARTZ)(3A)(?LAYER? OR ?COAT?
               OR ?FILM? OR ?SURFACE? OR LAMEL? OR ?LAMINAT? OR OVERLAY? OR
               OVERLAID OR SHEET#### OR ?DEPOSIT? OR OVERSPREAD? OR UNDERLY###
               # OR OVERLY#### OR OVERLIE# OR UNDERLIE# OR COVER? OR LINER OR LINING OR LINED)
L9       42469 SEA ABB=ON  (L6 OR L7 OR L8)
L10      11739 SEA ABB=ON  (?TRENCH? OR OPENING OR HOLE) AND (SIO2 OR SILICA
               OR SIOX)(3A)(?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE? OR
               LAMEL? OR ?LAMINAT? OR OVERLAY? OR OVERLAID OR SHEET#### OR
               ?DEPOSIT? OR OVERSPREAD? OR UNDERLY### OR OVERLY### OR
               OVERLIE# OR UNDERLIE# OR COVER? OR LINER OR LINING OR LINED)
L11      19022 SEA ABB=ON  (?TRENCH? OR OPENING OR HOLE) AND ((SILICON OR
               SI)(W)(?OXIDE?))(3A)(?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE?
               OR LAMEL? OR ?LAMINAT? OR OVERLAY? OR OVERLAID OR SHEET? OR
               ?DEPOSIT? OR OVERSPREAD? OR UNDERLY#### OR OVERLY#### OR
               OVERLIE# OR UNDERLIE# OR COVER? OR LINER OR LINING OR LINED)
L12      28875 SEA ABB=ON  (L10 OR L11)
L13      25052 SEA ABB=ON  L12 AND (SILICON OR SI)
L14      14824 SEA ABB=ON  L13 AND (ETCH? OR MICROETCH? OR CMP OR PLANARIZ?
               OR PLANARIS? OR ABLAT#### OR PIT#### OR ASH## OR MICROMACHIN? OR CUT#####)
L15      48766 SEA ABB=ON  L9 OR L14
L16      55759 SEA ABB=ON  L9 OR L13
L17          5 SEA ABB=ON  L16 AND (DYNASILAN? OR ?PERFLUORODECYLTRICHLOROSILA
               NE? OR ?TRICHLOROPERFLUORODECYLSILANE? OR ?FLUOROTETRAHYDRODECY
               LTRICHLOROSILANE? OR ?HEPTADECAFLUORODECYLTRICHLOROSILANE? OR
               ?HEPTADECAFLUORO?(8W) ?TETRAHYDROOCTYLTRICHLOROSILANE?)
L18          1 SEA ABB=ON  L16 AND (?OCTYLTRICHLOROSILANE?)(10A)(?FLUORO?)
L19          1 SEA ABB=ON  L16 AND (?PERFLUOROOCTYL?)(6A)(?TRICHLOROSILANE?)
L20          4 SEA ABB=ON  L16 AND (?PERFLUORODECYLTRICHLOROSILANE?)
L21          7 SEA ABB=ON  L16 AND (?TRICHLOROSILANE?)(10A)(?PERFLUORO? OR ?FLUORO?)
L22          0 SEA ABB=ON  L16 AND (?HEPTADECAFLUORODECYL?)(2A)(?SILANE?)
L23        139 SEA ABB=ON  L16 AND (?FLUORO? OR FLUORIN?)(12A)(?SILANE?)
L24          6 SEA ABB=ON  L16 AND ((?PERFLUOROTETRAHYDRO?)(10A)(?CHLOROSILANE
               ? OR ?METHOXYSILANE? OR ?ETHOXYSILANE?) OR (?PERFLUORO?)(10A)(?
               CHLOROSILANE?) OR (?PERFLUORO?)(10A)(?ETHOXYSILANE? OR
               METHOXYSILANE? OR ?HEXYLTRICHLOROSILANE?))
L25          0 SEA ABB=ON  L16 AND (?TETRAHYDROPERFLUORO?)(6A)(?SILANE?)
L26          0 SEA ABB=ON  L16 AND (?PEFLUORIN?)(10A)(?SILANE?)
L27         27 SEA ABB=ON  L16 AND (?OXYSILANE?)(10A)(?PERFLUORO? OR ?FLUORO?)
L28        158 SEA ABB=ON  L16 AND (?CHLORO?)(10A)(?SILANE?)
L29          5 SEA ABB=ON  L16 AND (?CHLORINATED?)(5A)(?SILANE?)
L30         55 SEA ABB=ON  L16 AND (?HEXYLTRICHLOROSILANE? OR ?DECYLTRICHLOROS
               ILANE? OR ?TRIACETOXYSILANE? OR ?CYLTRIETHOXYSILANE? OR
               ?FLUOROOCTYLTRICHLOROSILANE? OR ?FLUROCTYLTRICHLOROSILANE? OR
```

```
                ?XYLTRIMETHOXYSILANE? OR ?XYLTRIETHOXYSILANE?)
L31         1 SEA ABB=ON  L16 AND (SICL3)(5A)(CF3)
L32         1 SEA ABB=ON  L16 AND (CF3)(W) CF2)(10A)(SICL3)
L33        56 SEA ABB=ON  L16 AND (?FLUOROSILANE? OR ?FLUORO SILANE?)
L34         9 SEA ABB=ON  L16 AND (HALOGENATED)(5A)(?SILANE?)
L35         2 SEA ABB=ON  L16 AND (?PERFLUORINAT?)(5A)(?SILANE?)
L36         0 SEA ABB=ON  L16 AND (?PERFLUORINAT?)(5A)(POLYETHER)(5A)(?SILANE?)
L37         2 SEA ABB=ON  L16 AND (?CHLOROFLUOROSILANE? OR ?CHLORO FLUORO
                SILANE? OR ?CHLOROFLUORO SILANE? OR ?FLUOROCHLOROSILANE? OR
                ?FLUORO CHLORO SILANE? OR ?FLUOROCHLORO SILANE?)
L38         0 SEA ABB=ON  L16 AND (SILANES)(L)(ALKYL)(3A)(CHLORO OR FLUORO)
L39       208 SEA ABB=ON  L16 AND (?CHLORODIMETHYLSILANE? OR ?CHLOROMETHYLSIL
                ANE? OR ?CHLORO DIMETHYLSILANE? OR ?TRICHLOROMETHYLSILANE? OR
                ?TRICHLOROOCTADECYLSILANE? OR ?TRICHLOROSILANE? OR ?TRICHLOROVI
                NYLSILANE? OR ?TRIETHOXYSILANE? OR ?CHLOROMETHYLSILANE?)
L40       104 SEA ABB=ON  L16 AND (?FLUROMETHYLSILANE? OR ?TRIMETHOXYSILANE?
                OR ?CHLOROOCTAPHENYLSILANE?)
L41       101 SEA ABB=ON  L16 AND (ORGANOSILANE OR ORGANO SILANE OR ORGANIC SILANE)
L42       598 SEA ABB=ON  (L17 OR L18 OR L19 OR L20 OR L21 OR L22 OR L23 OR
                L24 OR L25 OR L26 OR L27 OR L28 OR L29 OR L30 OR L31 OR L32 OR
                L33 OR L34 OR L35 OR L36 OR L37 OR L38 OR L39 OR L40 OR L41)
L43        27 SEA ABB=ON  L42 AND (PASSIVAT? OR PASSIF##########)(3A)(?LAYER?
                OR ?COAT? OR ?FILM? OR ?SURFACE? OR LAMEL? OR ?LAMINAT? OR
                OVERLAY? OR OVERLAID OR SHEET#### OR ?DEPOSIT? OR OVERSPREAD?
                OR UNDERLY### OR OVERLY? OR OVERLIE# OR UNDERLIE# OR COVER? OR LINER OR LINING)
L44        45 SEA ABB=ON  L42 AND (L04-C12)/MC
L45       194 SEA ABB=ON  L42 AND (?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE?
                OR LAMEL? OR ?LAMINAT? OR SHEET#### OR ?DEPOSIT? OR COVER? OR
                LINER OR LINING)(3A)(FIRST OR 1ST OR INNER#### OR UNDER##### OR BOTTOM####)
L46       231 SEA ABB=ON  L42 AND (?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE?
                OR LAMEL? OR ?LAMINAT? OR SHEET### OR ?DEPOSIT? OR COVER? OR
                LINER OR LINING)(3A)(SECOND### OR 2ND OR OUTER#### OR ABOVE OR
                OVER##### OR ATOP OR TOP#### OR ADDITIONAL)
L47       154 SEA ABB=ON  L45 AND L46
L48       200 SEA ABB=ON  L42 AND (PLURAL### OR AT LEAST OR MORE THAN ONE OR
                MULTIPLE OR MULTIPLIC? OR MULTI OR MULTITUDE OR 2ND OR SECOND
                OR NUMEROUS)(3A)(?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE? OR
                LAMEL? OR ?LAMINAT? OR SHEET#### OR ?DEPOSIT? OR COVER? OR LINER OR LINING)
L49       165 SEA ABB=ON  L42 AND (LARGE NUMBER OR GREAT NUMBER OR MANY OR
                SEVERAL OR TWO OR GREATER THAN OR DUAL OR 2 OR PAIR### OR
                SET)(3A)(?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE? OR LAMEL? OR
                ?LAMINAT? OR SHEET#### OR ?DEPOSIT? OR COVER? OR LINER OR LINING)
L50       278 SEA ABB=ON  (L48 OR L49)
L51       291 SEA ABB=ON  L47 OR L50
L52        45 SEA ABB=ON  L51 AND (L43 OR L44)
L53        52 SEA ABB=ON  L51 AND (SIO2 OR SILICA OR SIOX OR SIO OR (SILICON
                OR SI)(W)(?OXIDE?))(5A)(INNER#### OR 1ST OR FIRST OR UNDER####
                OR BOTTOM#### OR BELOW OR SIDEWALL### OR SIDE WALL### OR WALL)
L54        21 SEA ABB=ON  L51 AND (INORGANIC OR INORG## OR PARTIAL)(3A)(?LAYE
                R? OR ?FILM? OR ?COAT? OR ?DEPOSIT? OR ?SURFACE? OR ?LAMINAT?
                OR LINER OR LINING OR COVER###)
L55        63 SEA ABB=ON  L51 AND (SILICON OR SI)(3A)(ETCH#####)
L56        88 SEA ABB=ON  L51 AND (H01L21-312 OR H01L21-316 OR H01L29-08)/IPC,IC
L57         0 SEA ABB=ON  L51 AND (MICROMACHINE OR MICRO MACHINE)
L58         0 SEA ABB=ON  L51 AND (MICROMECHANICAL DEVICES)
L59         5 SEA ABB=ON  L51 AND (MICRO ELECTRO MECHANICAL OR MICROELECTROMECHANICAL? OR MEM OR MEMS)
L60         7 SEA ABB=ON  L51 AND (POLYSILOXANES)
L61         9 SEA ABB=ON  L51 AND (POLYSILOXANE)
L62         0 SEA ABB=ON  L51 AND (CANTILEVERS)
L63         1 SEA ABB=ON  L51 AND (?CANTILEVER?)
L64        11 SEA ABB=ON  L51 AND (PASSIVATION)
L65         8 SEA ABB=ON  L51 AND (SELF-ASSEMBLED MONOLAYERS)
L66        11 SEA ABB=ON  L51 AND (SELF ASSEMBLED MONOLAYER)
L67         6 SEA ABB=ON  L51 AND (SAM)
L68         7 SEA ABB=ON  L51 AND (SELF-ASSEMBLY)
L69        22 SEA ABB=ON  L51 AND (SELF ASSEMBL#######)
L70       200 SEA ABB=ON  (L52 OR L53 OR L54 OR L55 OR L56 OR L57 OR L58 OR
                L59 OR L60 OR L61 OR L62 OR L63 OR L64 OR L65 OR L66 OR L67 OR L68 OR L69)
L71       189 SEA ABB=ON  L70 AND P/DT
L72        11 SEA ABB=ON  L70 NOT L71
L73         4 SEA ABB=ON  L72 NOT 2004-2010/PY
L74       121 SEA ABB=ON  L71 AND 1980-2003/PRY,PY
L75       124 SEA ABB=ON  L71 AND 2004-2009/PRY,PY
```

```
L76         65 SEA ABB=ON  L71 NOT L75
L77        125 SEA ABB=ON  L76 OR L74 OR L73
L78        124 SEA ABB=ON  L77 NOT L63
              D ALL MEMBB 1-124
```

07:35:07 ON 15 DEC 2009
08:43:53 ON 15 DEC 2009

```
FILE 'HCAPLUS, WPIX, JAPIO, KOREAPAT' ENTERED AT 07:35:22 ON 15 DEC 2009
L1   762580 SEA ABB=ON  (SILICON OR SI)(3A)(SUBSTRAT### OR WAFER OR CHIP
             OR MICROCHIP OR SLAB OR DIE OR ?LAYER? OR ?COAT? OR ?FILM? OR
             ?SURFACE? OR LAMEL? OR ?LAMINAT? OR OVERLAY? OR OVERLAID OR
             SHEET? OR ?DEPOSIT? OR OVERSPREAD? OR UNDERLY### OR OVERLY###
             OR OVERLIE# OR UNDERLIE# OR COVER?)
L2   106603 SEA ABB=ON  L1 AND (MICROETCH? OR ETCH##### OR SPUTTER? OR
             ABLAT#### OR PIT#### OR ENGRAV#### OR ASH### OR MICROMACHIN?
             OR CUT#### OR REMOV### OR MACHIN### OR PLANARIS##### OR
             PLANARIZ##### OR POLISH#### OR CMP)(4A)(SILICON OR SI)
L3    24952 SEA ABB=ON  L1 AND (?TRENCH? OR CONCAVE OR CONCAVIT? OR HOLE
             OR ORIFICE OR APERTURE OR SOCKET OR CAVIT### OR MICROCAVIT? OR
             RECESS#####)(4A)(SILICON OR SI)
L4     6581 SEA ABB=ON  L1 AND (INDENT##### OR MICROINDENT? OR VOID OR
             OPENING OR MICROVOID OR SLOT OR SLIT)(4A)(SILICON OR SI)
L5    17140 SEA ABB=ON  L1 AND (THROUGHHOLE OR THROUGHOLE OR THROUGH HOLE
             OR CREVICE OR MICROCREVICE OR ?CHANNEL? OR ?GROOV? OR VALLEY
             OR GULLEY OR FURROW### OR STI)(4A)(SILICON OR SI)
L6    50282 SEA ABB=ON  L1 AND (ETCH#####)(3A)(SILICON OR SI)
L7    23334 SEA ABB=ON  L1 AND (?TRENCH? OR VIA OR OPENING OR APERTURE OR HOLE)(3A)(SILICON OR SI)
L8   142601 SEA ABB=ON  (L2 OR L3 OR L4 OR L5 OR L6 OR L7)
L9    11740 SEA ABB=ON  L8 AND (SIO2 OR SILICA)(3A)(?LAYER? OR ?COAT? OR
             ?FILM? OR ?SURFACE? OR LAMEL? OR ?LAMINAT? OR OVERLAY? OR
             OVERLAID OR SHEET#### OR ?DEPOSIT? OR OVERSPREAD? OR UNDERLY###
             OR OVERLY### OR OVERLIE# OR UNDERLIE# OR COVER? OR LINER OR LINING OR LINED)
L10   28483 SEA ABB=ON  L8 AND (SIO OR (SILICON OR SI)(W)(?OXIDE?))(3A)(?LA
             YER? OR ?COAT? OR ?FILM? OR ?SURFACE? OR LAMEL? OR ?LAMINAT?
             OR OVERLAY? OR OVERLAID OR SHEET? OR ?DEPOSIT? OR OVERSPREAD?
             OR UNDERLY#### OR OVERLY#### OR OVERLIE# OR UNDERLIE# OR
             COVER? OR LINER OR LINING OR LINED)
L11     421 SEA ABB=ON  L8 AND (SIOX)(3A)(?LAYER? OR ?COAT? OR ?FILM? OR
             ?SURFACE? OR LAMEL? OR ?LAMINAT? OR OVERLAY? OR OVERLAID OR
             SHEET#### OR ?DEPOSIT? OR OVERSPREAD? OR UNDERLY#### OR
             OVERLY#### OR OVERLIE# OR UNDERLIE# OR COVER? OR LINER OR LINING OR LINED)
L12   22229 SEA ABB=ON  L8 AND (SIN OR SI3N4 OR (SILICON OR SI)(W)(NITRIDE)
             )(3A)(?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE? OR LAMEL? OR
             ?LAMINAT? OR OVERLAY? OR OVERLAID OR SHEET#### OR ?DEPOSIT? OR
             OVERSPREAD? OR UNDERLY? OR OVERLY#### OR OVERLIE# OR UNDERLIE#
             OR COVER? OR LINER OR LINING OR LINED)
L13     928 SEA ABB=ON  L8 AND (INORGANIC OR INORG##)(3A)(?LAYER? OR
             ?COAT? OR ?FILM? OR ?SURFACE? OR LAMEL? OR ?LAMINAT? OR
             OVERLAY? OR OVERLAID OR SHEET#### OR ?DEPOSIT? OR OVERSPREAD?
             OR UNDERLY#### OR OVERLY#### OR OVERLIE# OR UNDERLIE# OR
             COVER? OR LINER OR LINING OR LINED)
L14   49071 SEA ABB=ON  (L9 OR L10 OR L11 OR L12 OR L13)
L15    1370 SEA ABB=ON  L14 AND (POLYSILOXANE OR ?SILANE? OR (ORGANIC OR
             ORG##)(4A)(SILICON OR SI))(5A)(?LAYER? OR ?COAT? OR ?FILM? OR
             ?DEPOSIT? OR ?LAMINAT? OR ?SURFACE? OR OVERLAY#### OR OVERLY###
             # OR OVERSPREAD? OR COVER?)
L16      42 SEA ABB=ON  L14 AND (POLYSILOXANE)(L)(?LAYER? OR ?FILM? OR
             ?COAT? OR ?DEPOSIT? OR ?LAMINAT? OR ?SURFACE? OR OVERLAY####
             OR OVERLY### OR OVERSPREAD? OR COVER####)
L17    1380 SEA ABB=ON  (L15 OR L16)
L18       3 SEA ABB=ON  L14 AND (DYNASILAN? OR ?PERFLUORODECYLTRICHLOROSILA
             NE? OR ?TRICHLOROPERFLUORODECYLSILANE? OR ?FLUOROTETRAHYDRODECY
             LTRICHLOROSILANE? OR ?HEPTADECAFLUORODECYLTRICHLOROSILANE? OR
             ?HEPTADECAFLUORO?(8W) ?TETRAHYDROOCTYLTRICHLOROSILANE?)(3A)(?LAYER? OR ?FILM? OR ?COAT?)
L19      12 SEA ABB=ON  L14 AND (?HEXYLTRICHLOROSILANE? OR ?DECYLTRICHLOROS
             ILANE? OR ?TRIACETOXYSILANE? OR ?CYLTRIETHOXYSILANE? OR
             ?FLUOROOCTYLTRICHLOROSILANE? OR ?PLUROCTYLTRICHLOROSILANE? OR
             ?XYLTRIMETHOXYSILANE? OR ?XYLTRIETHOXYSILANE?)(3A)(?LAYER? OR ?FILM? OR ?COAT?)
L20       0 SEA ABB=ON  L14 AND (?CHLOROFLUOROSILANE? OR ?CHLORO FLUORO
             SILANE? OR ?CHLOROFLUORO SILANE? OR ?FLUOROCHLOROSILANE? OR
             ?FLUORO CHLORO SILANE? OR ?FLUOROCHLORO SILANE?)(3A)(?LAYER?
             OR ?COAT? OR ?SURFACE? OR ?FILM?)
L21      20 SEA ABB=ON  L14 AND (?CHLORODIMETHYLSILANE? OR ?CHLOROMETHYLSIL
             ANE? OR ?CHLORO DIMETHYLSILANE? OR ?TRICHLOROMETHYLSILANE? OR
```

Sheet 1 of 3

```
                ?TRICHLOROOCTADECYLSILANE? OR ?TRICHLOROSILANE? OR ?TRIETHOXYSI
                LANE? OR ?CHLOROMETHYLSILANE?)(3A)(?COAT? OR ?FILM? OR ?SURFACE?)
L22    1380 SEA ABB=ON  (L15 OR L16 OR L17 OR L18 OR L19 OR L20 OR L21)
L23     182 SEA ABB=ON  L22 AND (SIO2 OR SILICA OR SIOX OR SIO OR (SILICON
                OR SI)(W)(?OXIDE?))(5A)(INNER#### OR 1ST OR FIRST OR UNDER####
                OR BOTTOM#### OR BELOW OR SIDEWALL### OR SIDE WALL### OR WALL)
L24     109 SEA ABB=ON  L22 AND (SIN OR SI3N4 OR (SILICON OR SI)(W)(NITRIDE
                ) OR INORGANIC OR INORG##)(5A)(INNER#### OR 1ST OR FIRST OR
                UNDER#### OR BOTTOM#### OR BELOW OR SIDEWALL### OR SIDE WALL### OR WALL)
L25     257 SEA ABB=ON  (L23 OR L24)
L26      61 SEA ABB=ON  L22 AND (PLURAL### OR MORE THAN ONE OR MULTIPLE)(3A
                )(?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE? OR LAMEL? OR
                ?LAMINAT? OR SHEET#### OR ?DEPOSIT? OR COVER? OR LINER OR LINING)
L27     316 SEA ABB=ON  L22 AND (SEVERAL OR TWO OR GREATER THAN ONE OR
                DUAL OR 2 OR PAIR### OR SET)(3A)(?LAYER? OR ?COAT? OR ?FILM?
                OR ?SURFACE? OR LAMEL? OR ?LAMINAT? OR SHEET#### OR ?DEPOSIT?
                OR COVER? OR LINER OR LINING)
L28      27 SEA ABB=ON  L26 AND L27
L29     493 SEA ABB=ON  L22 AND (?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE?
                OR LAMEL? OR ?LAMINAT? OR SHEET#### OR ?DEPOSIT? OR COVER? OR
                LINER OR LINING)(4A)(FIRST OR 1ST OR INNER#### OR UNDER##### OR BOTTOM####)
L30     601 SEA ABB=ON  L22 AND (?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE?
                OR LAMEL? OR ?LAMINAT? OR SHEET### OR ?DEPOSIT? OR COVER? OR
                LINER OR LINING)(4A)(SECOND### OR 2ND OR OUTER#### OR ABOVE OR
                OVER#### OR ATOP OR TOP#### OR ADDITIONAL)
L31     384 SEA ABB=ON  L29 AND L30
L32     479 SEA ABB=ON  L25 OR L28 OR L31
L33      30 SEA ABB=ON  L32 AND (PASSIVAT? OR PASSIF###########)(3A)(?LAYER?
                OR ?COAT? OR ?FILM? OR ?SURFACE? OR LAMEL? OR ?LAMINAT? OR
                OVERLAY? OR OVERLAID OR SHEET#### OR ?DEPOSIT? OR OVERSPREAD?
                OR UNDERLY### OR OVERLY? OR OVERLIE# OR UNDERLIE# OR COVER? OR LINER OR LINING)
L34     333 SEA ABB=ON  L32 AND (INSULAT##### OR DIELEC######## OR
                PROTECT?)(3A)(?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE? OR
                LAMEL? OR ?LAMINAT? OR OVERLAY? OR OVERLAID OR SHEET#### OR
                ?DEPOSIT? OR OVERSPREAD? OR UNDERLY### OR OVERLY? OR OVERLIE#
                OR UNDERLIE# OR COVER? OR LINER OR LINING)
L35     165 SEA ABB=ON  L32 AND (BARRIER OR PROTECT? OR PREVENT? OR
                CLAD##### OR BUFFER? OR BLOCK### OR ISOLAT####)(3A)(?LAYER? OR
                ?COAT? OR ?FILM? OR ?SURFACE? OR LAMEL? OR ?LAMINAT? OR
                OVERLAY? OR OVERLAID OR SHEET####)
L36      68 SEA ABB=ON  L32 AND (L04-C12)/MC
L37     365 SEA ABB=ON  (L33 OR L34 OR L35 OR L36)
L38     103 SEA ABB=ON  L37 AND (H01L21-312 OR H01L21-316 OR H01L29-08)/IPC,IC
L39       0 SEA ABB=ON  L37 AND (MICROMACHINE OR MICRO MACHINE)
L40       3 SEA ABB=ON  L37 AND (MICROMECHANICAL? OR MICRO MECHANICAL?)
L41       0 SEA ABB=ON  L37 AND (MICROMECHANICAL DEVICES)
L42       4 SEA ABB=ON  L37 AND (MICRO ELECTRO MECHANICAL OR MICROELECTROMECHANICAL? OR MEM OR MEMS)
L43       1 SEA ABB=ON  L37 AND (CANTILEVERS)
L44       2 SEA ABB=ON  L37 AND (?CANTILEVER?)
L45      28 SEA ABB=ON  L37 AND (PASSIVATION)
L46       1 SEA ABB=ON  L37 AND (SELF-ASSEMBLED MONOLAYERS)
L47       1 SEA ABB=ON  L37 AND (SELF ASSEMBLED MONOLAYER)
L48       0 SEA ABB=ON  L37 AND (SAM)
L49       0 SEA ABB=ON  L37 AND (SELF-ASSEMBLY)
L50       1 SEA ABB=ON  L37 AND (SELF ASSEMBL#######)
L51     129 SEA ABB=ON  (L38 OR L39 OR L40 OR L41 OR L42 OR L43 OR L44 OR
                L45 OR L46 OR L47 OR L48 OR L49 OR L50)
L52       0 SEA ABB=ON  L51 AND (PARTIAL LAYER)
L53       0 SEA ABB=ON  L51 AND (ATTACK####)(3A)(ETCH?)
L54      36 SEA ABB=ON  L51 AND (L04-C12 OR L04-C27 OR U11-C05B9A OR U11-C18C)/MC
L55      11 SEA ABB=ON  L51 AND (?LAYER? OR ?COAT? OR ?FILM? OR ?SURFACE?)(
                3A)(SIDEWALL OR SIDE WALL OR WALL)
L56       4 SEA ABB=ON  L51 AND (DUAL)(2A)(?LAYER? OR ?COAT? OR ?FILM?)
L57     169 SEA ABB=ON  L33 OR L36 OR (L38 OR L39 OR L40 OR L41 OR L42 OR
                L43 OR L44 OR L45 OR L46 OR L47 OR L48 OR L49 OR L50 OR L51 OR
                L52 OR L53 OR L54 OR L55 OR L56)
L58     150 SEA ABB=ON  L37 AND (?LAYER? OR ?FILM? OR ?COAT? OR PASSIVAT###
                ####)(3A)(?TRENCH? OR OPENING OR HOLE OR APERTURE OR INSIDE OR
                SIDEWALL OR SIDE WALL OR WALL)
L59       3 SEA ABB=ON  L37 AND (COATING MATERIALS)
L60     251 SEA ABB=ON  (L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR L57 OR L58 OR L59)
L61     248 SEA ABB=ON  L60 AND P/DT
L62       3 SEA ABB=ON  L60 NOT L61
```

```
L63             2 SEA ABB=ON   L62 NOT 2003-2010/PY
L64           167 SEA ABB=ON   L61 AND 1980-2002/PRY,PY
L65           148 SEA ABB=ON   L61 AND 2003-2009/PRY,PY
L66           100 SEA ABB=ON   L61 NOT L65
L67           170 SEA ABB=ON   L66 OR L64 OR L63
                   D ALL MEMBB 1-170
```

L67 ANSWER 10 OF 170   COPYRIGHT ACS on STN
AN   1997:88549 HCAPLUS
TI   Formation of component isolation regions in semiconductor devices
IN   Kuwata, Takaaki
PA   Nippon Electric Co, Japan
SO   Jpn. Kokai Tokkyo Koho, 9 pp.
     CODEN: JKXXAF
DT   **Patent**
LA   Japanese

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 08288382	A	19961101	JP 1995-95306	19950420 <--
PRAI JP 1995-95306		19950420 <--		

AB   The title process involves forming narrow and wide grooves by RIE over a
     photoresist mask on a **Si substrate, depositing** an **organic** polymer on the
     sidewalls of the grooves, plasma oxidizing to give a **Si oxide film** on the
     bottom of the grooves, liquid-phase depositing a Si oxide film on the substrate
     to fill in **over** the grooves, removing the **deposited** surface oxide layer and the
     photomask, **depositing a Si oxide film,** and subsequently isotropic wet-etching
     the surface to expose the substrate for a leveled surface with a fluorocarbon
     etchant.
ST   component isolation region formation semiconductor device
IT   Electric insulators
         (component isolation; formation of component isolation regions in
         semiconductor devices)
IT   Hydrocarbons, uses
     RL: NUU (Other use, unclassified); USES (Uses)
         (fluoro, etchant; formation of component isolation regions in
         semiconductor devices)
IT   Etching
         (fluorocarbon etchant; formation of component isolation regions in
         semiconductor devices)
IT   Semiconductor devices
         (formation of component isolation regions in semiconductor devices)
IT   Oxidation
         (plasma; formation of component isolation regions in semiconductor
         devices)
IT   7631-86-9P, **Silica,** properties
     RL: DEV (Device component use); PNU (Preparation, unclassified); PRP
     (Properties); PREP (Preparation); USES (Uses)
         (**deposition, insulator;** formation of component
         isolation regions in semiconductor devices)